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PREFACE

The Technique of Oil Painting is an Essay on the methods of oil painting adapted to our modern work. It includes a concise statement of the properties of the various substances currently used in painting, of their relative value, and of the difficulties resulting from the improper use of the best materials. How much such information is needed is shown by the rapid deterioration of almost all modern paintings. Herein you will find the elemental data which I hope you will supplement with experiments of your own, for it is only experimental knowledge which is worth having.

The Foreword was printed as an Introduction to a catalogue of my paintings exhibited in the Spring of 1912, at the Gallery of the Berlin Photographic Company, Madison Avenue, New York. As there is so much in it pertinent to the subject-matter of the other essays, and as it is out of print, I shall republish it with slight corrections.

The modern art-student is unwilling to read Leonardo's treatise on painting in its entirety. It is unfortunate for it is an unusually clear exposition of a definite point of view in art. His attitude is so entirely wholesome that with these essays I have printed a number of precepts from Leonardo's writings dealing with some of the important problems which every student of painting must consider.

The Other Essays were written last Summer for the students of my Art Class at Ogunquit, Maine.

They are but variations on three themes—Earnestness, Respect for Tradition, Sincerity. All art-teaching should be but variations of these themes. The master can only say—Work—Love the great works of art of the past—To Nature and to the promptings of your own heart be true.

Brooklyn, New York,

November 12, 1913.

A FOREWORD

In these days it is considered so essential that the playwright should preface his drama with an introduction explaining the purpose underlying the plot, that it seems natural that the painter who desires to have his aims understood, should likewise give an explanation of the fundamental reasons for his art. Such a course would seem especially desirable, when, as in my own case, the various phases of his work are so incongruous as to make it difficult to perceive the single directing impulse back of every phase. When, therefore, I was asked to defend my artistic belief, I felt little hesitancy about setting forth certain principles involved, especially as they apply, not to my paintings alone, but to all manifestations of art which are not reactionary in their tendency.

Until within a very few years the artist's immediate environment has been the one strong moulding influence. Almost all the Italian masters of the Renaissance were in a measure dominated by the art of their native provinces. In thus merging their personalities with the life about them, these artists built up local traditions of extraordinary vitality. And early in the nineteenth century we still find the Norwich School in England, although founded on the work of the earlier Dutch masters, essentially local. That little corner of Norfolk and the landscapes of Hobbema and Ruysdael were their sole inspirations. Nor later was the Barbizon School more cosmopolitan.

But, with the advent of the Impressionists, many barriers were thrown down until, to-day, our horizon has broadened almost infinitely. Some of us have come to understand, as no one had ever understood before, not only the work of our own spiritual ancestors in all the stages of its development, but also the art of alien peoples. All of the great works of Greek art which we now know have been discovered for our Western civilization since the Renaissance. The creations of primitive times are also coming to light, each year bringing some new and vital form of art to enrich our inheritance. Barbaric races, in exchange for a few beads, are letting us have their priceless heirlooms, which should have the power to give us renewed youth and energy. Surely we are not all so jaded but that we shall find inspiration from these riches, just as the artists of the Renaissance were quickened by the discovery of a few Hellenic originals.

Unless we are to live in intellectual and artistic strait-jackets, this breaking down of all barriers of race and of time should prove the death-blow to the general use of any one style. Instead of the local traditions into which the individual fused his personality, there should come freedom in which the artist is left to choose from every epoch the traditions suited to his temperament and to modify his technique at will. From this will come work more diversified than that of any previous epoch, showing our widened range of appreciation, our more democratic outlook. If we are to express the complex nature of our civilization, absolute freedom from all preconceived ideas as to the subject-matter or the purpose of art is essential, and

we must have an equal liberty as to the means employed. For our modern man is no longer a creature of local tradition, but a citizen of the world, the heir of the ages, and any art, not emancipated from that of the preceding generation, would be false to our times.

Now America should be in the vanguard of this movement for freedom, for a broader philosophy on which to build our art, our literature, and our lives, for a fuller sympathy with all manner of men and their works. But alas, our democracy is only skin-deep, we are still too tightly fettered by the trammels of convention and our desire for novelty is too easily satisfied. What is superficially new always interests us, but what is fundamentally new, unless cloaked in some outlandish garb, is usually passed unnoticed. This innate superficiality prevents us from recognizing what freedom from convention means. It is usually considered to be the license to follow one's individual caprice without serious preparatory labor, whereas it is only through endless toil that real freedom of expression can be gained. Familiarity with many forms of expression will furnish the materials which will enable the artist gradually to evolve a style peculiarly suited to himself.

America is full of men trying to find short cuts to riches and fame, and when we find a man who has the courage to resist the general infection, we usually find him living an isolated life. It will not always be so. America will stand for something nobler and we shall all work shoulder to shoulder. We shall be true to the traditions of our great apostles of democracy,—Lincoln, Walt Whitman and Winslow Homer.

"For while the tired waves, vainly breaking,
Seem here no painful inch to gain,
Far back, through creeks and inlets making,
Comes silent, flooding in, the main."

Not having suffered from the domination of tradition—for from the first, I was heedless of authority—I have never felt the violent reaction against academic teaching which throws men into open rebellion. The first few years of my life abroad, I had no instruction and few friends, working almost entirely by myself. My preoccupation then, as now, was to so represent the objects I chose to paint, that one should feel their bulk, weight, solidity and permanence. It was only later through Bernhard Berenson that I came to understand these instinctive feelings and to appreciate that the primary aim of my work had been what Berenson has called the "tactile values." Secondarily I was interested in the relationship between the masses of tone, the patterning and balance produced by these masses, and the color harmony. These last qualities, which we may call composition, must always, I feel, be secondary considerations in vital art, subordinated to the choice of subject and its realization.

Throughout my French training, my teachers and friends among the artists warned me against the American failing, the desire to shine. My first teacher, Gérôme, and Fantin-Latour, my earliest friend, were equally insistent. Gérôme was an excellent teacher and, notwithstanding Cézanne's wonderful characterizations, I would still consider Fantin-Latour as the greatest portrait painter of our day because of his broader sympathy with his subject. I came to know many of those

who had posed for him, and his appreciation of the inner life of each one was marvellous. I was fortunate in coming into contact with two such men just after my aims had crystallized. In my almost daily intercourse with Fantin, I could not but absorb his intense dislike for sham and his love for simple, direct work. Clever brushwork meant absolutely nothing to him unless it fully realized the artist's purpose, as in the case of Velasquez. As I came to realize how fatuous all cleverness is the desire came to me to work entirely under Fantin. After much irresolution I mustered up courage to ask him when I called one afternoon, to take me as a pupil. "Never!" he exclaimed. "You ought to know me well enough by this time, to know that I do not believe in teachers, academies, and all that paraphernalia. Sit down, be true to the model and to yourself, is all anyone can ever tell you." Then he added, seeing my look of disappointment, "Well, my boy, bring your work in whenever you want and I shall do what I can to help you." During the exposition of 1900 he said to me: "Of course if it's portrait work you want to do, stay here in France, but, if it's landscape, go back to America and put yourself under Vanslow Omare." His appreciation of Winslow Homer was a new bond between us. A little later I saw a great deal of Raphael Collin, to whom I was first drawn through our common interest in Japanese prints, sword-guards, Corean pottery and Tanagra figures. He, too, felt the need of correcting a tendency to be satisfied with painting which looked well on the surface. Lucien Simon became interested in my first bungling attempts at portraiture. Feeling that my early efforts needed

direction, he decided to offer to help me, and, in order to do so without giving offense, he suggested: "It seems to me that we might be of mutual assistance. What would you think of my coming to your studio every other Saturday and helping you with your work, and then, from time to time, you will come and help me?" Simon had not a trace of the prevalent commercial spirit which leads men to repeat the motives of a successful painting. Whenever he was satisfied with my work it was always: "Now you have shown you can do this, find some entirely new subject which interests you and paint that." Of the older painters Simon admired none more than Fantin-Latour, but his admiration was tempered with the regret that Fantin had found himself at thirty, and had been satisfied with vain repetitions, when he might have gone on and conquered new realms of art, to which conquests there should be no end. But I also owe much Gustave Courtois. He was most kind to me, earnest and sincere. I learned from him what not to do. Gaston La Touche and later, Desvallières and Ménard I saw less, yet their advice was also most helpful.

These, then, were the chief influences of my Paris days. On all occasions I met with such tact, kindness and generosity on the part of these men that I have a deep sense of mortification whenever I think of the awkwardness with which I expressed my gratitude to them. My other gods, worshipped from afar, were Degas, Renoir, Manet, Chassériau, and Puvis de Chavannes. The work of Gauguin and of Cézanne I only knew later. I might add that if I owe much to modern French art, I owe still more to the old Italian masters,

especially to the early Florentines. Since my return to America I have been most influenced, perhaps, by four hard workers, Arthur Davies, Picasso, Maurice Sterne, and Will Rothenstein. It is perhaps misleading to speak of these men as having influenced me. They have rather given me the courage to be true to myself.

With the infinite range of color harmonies at our disposal, I have never sympathized with the peculiar practice of the Northern Schools. Almost all of their painters since the time of Franz Hals have each chosen a single color key in which he has constantly worked. The practice of all other vital schools, shown so well in the work of the primitive Italians, seems alone defensible. Botticelli, for instance, has given to each of his paintings the peculiar quality of color suited to the subject, a bloom as distinct as the flavor of a fine old wine. In portraiture the sitter's character should suggest a color key and a technique suited to the peculiarities of feature and of dress. In imaginative work even more freedom is needed fully to bring out the theme in all its force. The freedom which the painter should have is the liberty to paint in many keys, and to use such methods of applying paint as may seem suited to the subject. Give him the right, when necessary, to ignore perspective—light and shade—values. Let him, if he wishes, express at various times the most incongruous phases of our complex modern life without being accused of lacking in personality or style. Personality is shown in the vision back of it all, not by the way a man puts on the paint.

But this fight for liberty which is being led by the modern French painters is only a part of the

great movement for independence in all branches of art. For instance, in music, so adapted by its very flexibility to express our aspirations, the outlook with us is especially disheartening. "Ariane et Barbe Bleue," by Paul Dukas,—considered in Paris to be the modern masterpiece of French operatic music,—has just been performed at great expense at the Metropolitan Opera House. As clear cut as fine Chinese porcelain, expressing so fully our modern feeling for crystalline brilliancy and sharpness of outline, it should have received a hearty welcome, but the critics have been hostile, simply because each of them had a preconceived notion of what music should be. Dukas may or may not be a master whose works will be played a century hence. All that should concern us is that his music expresses, as no other, certain emotions of the cultured intellectual life of our day, just as Wagner's expressed the feelings of another class a generation ago.

Let our struggle for freedom be, not a selfish one waged for our own branch of art, but a fight for universal liberty of expression wherever liberty does not stand for license.

February, 1912.

THE TECHNIQUE OF OIL PAINTING MATERIALS

The materials used in oil painting are ordinarily the following—a base or support (wood, canvas, cardboard or metal) dry pigments which are ground in oil, siccatives to accelerate the drying, essential oils to dilute the colors, and dissolved resins (varnishes) to protect the final painting from the air. I shall first consider what materials are the best fitted for oil-painting.

PANELS

Wood was the support used for the earliest known movable paintings. The Egyptians used wood several thousand years before Christ and some of their paintings have come down to us less changed in color than much of the work of the early Nineteenth Century. It is still the most satisfactory foundation if absolute stability of the colors is to be considered as the first desideratum, but the wood must be thoroughly seasoned, and should not contain more than one per cent of resin.

I was forced to this conclusion some years back when I made a careful study of the paintings in the Vienna Gallery with the idea of discovering the causes for the deterioration of oil color. It became apparent that more damage came from the insufficiency of the support than from any other single cause. Of the paintings on wooden panels only six per cent had seriously deteriorated with time, whereas of those on canvas the percentage was fifty-five per cent. The risk of alteration of the

color is therefore over nine times greater to paintings on canvas than to those on panels. I cannot, therefore, too strongly urge the use of wooden panels or cardboard (if made by a reliable manufacturer) for paintings less than sixteen inches wide. The Belgians are skillful in building up wider panels of mahogany. They resist our climate fairly well but are expensive.

With the smaller panels the only difficulty is the tendency the wood has to alternately contract and expand with the daily variations in the dryness of our steam-heated houses. Few of the old Italian panel-paintings have been able to withstand these changes in the atmospheric conditions when they were brought to America. The woods used were soft and porous and in consequence were easily affected by humidity. Moreover the gesso primings, too heavy and too brittle to respond to the expansion and shrinkage of the wood, scaled off. The use of gesso by the Italians was required because they underpainted largely with tempera. Gesso is unnecessary to-day so that we avoid the dangers to which their work was liable. Our woods are much more suited for the purpose than were theirs. Mahogany, cedar, and our native black walnut are superior to the poplar and oak used during the Renaissance. They are close-grained woods, more impervious to moisture and relatively free from the attacks of insects. Oak, although liable to warp and to split, pine when free from knots and resin, whitewood, and poplar may all be used without much risk, but, as I have said, all wood must be well seasoned.

You can paint directly on the panel, but it is well to oil it slightly first unless you wish the base

to be absorbent. Meissonier has made some charming sketches leaving large portions of the panel bare. In case you should ever wish to do the same, the entire surface should be oiled (with pure linseed or poppy oil) in order that the portions left unpainted should not darken when the picture is varnished.

The old masters obtained great brilliancy by painting on the pure white gesso ground. This method of preparation, as I have said, is not a safe one as the gesso does not adhere well to the panel nor is it sufficiently elastic to expand and contract with the wood. But there is another way to prepare the panel which gives almost as brilliant results. First brush the panel on both sides with a wash of a five per cent solution of corrosive sublimate in alcohol. This will prevent the ravages of insects and will kill many of the germs of rot. When thoroughly dry apply a coat of flake white thinned with a little linseed oil. In two weeks a second coat may be applied. Three weeks later a third if desired. If you wish a smooth ground each coat of paint should be polished with pumice-stone just before putting on the next. This preparation can be toned by mixing with the final coat of flake white any color which dries rapidly. The panels should be kept in a light place while they are being prepared as the linseed oil in the paint becomes rancid if the panels are kept in the dark. Indeed it is always well to keep prepared panels in a fairly light room. Should they ever smell of rancid oil place them three or four successive days for several hours in direct sunlight and then wash them well with soap and water. After washing rinse off the soap thoroughly with clear water and they will be

ready to use. The back and edges of each panel should be painted also to prevent warping. It is well to give the back the same number of coats as the face, so that the evaporation of moisture from the opposite sides of the panel will always be equal.

If you follow these instructions you should never have any difficulty with wood as a foundation.

CANVAS

Since the middle of the Sixteenth Century canvas has been more widely used than any other foundation for painting. The ease with which a decoration on canvas could be rolled up and taken from place to place must have been a factor in this change of base. Another reason must have been the desire to have a surface showing the texture of the foundation, for the Venetians from the start began using canvas with a coarse grain. That the later works of Titian and Tintoretto have so blackened with time is largely owing to the inequalities of the surface paint caused by the coarseness of the canvas. No way has yet been found to remove the varnish in the depressions between the threads of the canvas and, as all varnish becomes opaque with age, the result is disastrous. This darkening is especially noticeable in the painting of Titian, Diana's Hunting Party, in which the roughness of the canvas has been accentuated by the amount of medium he used in painting. Disregarding the deterioration of such work, the impressionists of to-day are but inviting a like disaster through the inequalities of their surface paint.

Doubtless canvas seemed a perfect foundation to the Italians of the Sixteenth Century. We know now more of its defects, yet I think but few of you appreciate how much more rapidly paint blackens on canvas than on wood. The air doubtless attacks the paint from its more vulnerable side through the canvas. This can in a measure be prevented by giving the back of the canvas a thin coat of pure shellac, and upon the shellac, while wet, press sheets of tin-foil. I have prepared a wax-finish for oil paintings which rubbed on the back of the canvas protects the painting. Not only does it protect the pigments from oxidation but it effectually prevents the absorption of moisture by the canvas. This is very essential, for the alternate expansion and contraction of the base affects the painting at times causing minute cracks throughout the surface. Several years ago I was painting a portrait in the White Mountains and, as is my custom, I placed the canvas outdoors in full sunshine to dry. It was forgotten and the next morning the dew had made the canvas shrink so much that the stretcher had given way under the strain. Under no circumstances should you oil the back of a canvas to protect it from damp or use an oil varnish.

The best linen canvas will rapidly disintegrate after having been soaked with linseed or poppy oil. This is a prime difficulty in our technique. The simplest way out of the trouble is to size the canvas and then to paint directly on the size. Leonardo says: "Stretch your canvas upon a frame, then give it a coat of weak size, let it dry, and draw your outlines upon it. Paint the flesh colors first, and while it is still fresh, paint also the shadows well

softened and blended together." The more usual preparation is one of whiting and glue (gesso) which also prevents the oil from coming into contact with canvas. The objection is that gesso with time becomes brittle. It should therefore not be laid on thick. Over the gesso are brushed on thin coats of flake-white and oil. Ordinary painters' canvas has been prepared according to this method. It must be examined carefully in order to be sure that it will make a good foundation. Crumple a corner between your fingers and you can tell at once whether the preparation is good. If it cracks badly or scales off the canvas should be rejected. I have already spoken of the defects of a rough surface as a foundation.

To return to Leonardo's method of painting directly on the sized canvas. For this purpose you should buy a fine-grained linen canvas. Unbleached linen such as is used for sheeting is an excellent material. It is always safer to have it washed for, even in the manufacture of unbleached sheeting, alkalis or acids may have been used. Your size must also be beyond reproach. It should not be too soluble in cold water for such a size is liable to crack, and you must be sure that it neither alkaline nor acid. Test it with litmus paper. I use a very good quality of French glue such as is used in France for gilding. The simplest way out of the difficulty, and perhaps the best, is to go down to the kitchen and get a box of Peter Cooper's Gelatine. Follow the directions for making jelly, using, however, but half as much water. Give your canvas two coats of the solution, the first fairly warm, the second almost cold. Leonardo's method, however, seems to me not wholly satisfactory un-

less you mix a little whiting into your second coat of size, or prime your size with a coat of Flake White thinned with oil. Otherwise the results seem thin in quality, the lights are dull compared with the brilliancy you can get from painting over a white undertone. It takes far more pigment to get richness of color, and, unless you paint heavily, the varnish tends to emphasize unpleasantly any roughness in the canvas. Of course if you mean to paint ten years on a "Gioconda," such roughnesses will be hidden beneath many layers of paint, but I have taken it for granted that you desire to paint somewhat in the manner of your contemporaries.

Absorbent canvas is usually prepared by using less size in the preparation. The canvas chosen is of coarser texture and frequently it is not a safe base upon which to paint. In working look from time to time at the back of the canvas and see that the oil does not strike through. If it does you should discard the canvas, for it will rapidly disintegrate. The preparation of the canvas is supposed to absorb the oil, which unfortunately leaves the pigment without sufficient protection against oxidation. This is especially dangerous if any essential oil has been used as a medium. The effect is sympathetic. Alexander's dull decorative panels painted in this manner were much admired when I was a student in Paris. A slow-drying oil varnish would protect the colors but all the peculiar decorative quality would be lost.

Frequently a canvas is dented from having received a knock. The dented surface has but to be moistened on the back and will dry flat. The canvas of paintings are also liable to be torn. Such tears should be mended by placing the picture face

downwards on a soft flat surface (the top of a billiard table is ideal), smoothing the canvas carefully, and glueing a patch of light canvas over the rent. Lay a piece of blotting-paper over the patch and upon the paper put a heavy book.

OTHER BASES

Painters have also used paper glued on wood or metal, cardboard and metal for a support. In the past cardboard has not been manufactured in sufficiently large pieces for any but small paintings. It now can be had in much larger sizes. The academy boards of Windsor and Newton are an excellent quality of prepared cardboard. Any good cardboard may be prepared in the same way as wooden panels. The objection to such a base is that the corners are liable to physical injury. Paper glued on wood or metal is satisfactory except that it does not always remain firmly attached to the support. Copper is an unsatisfactory base on account of its chemical action on certain colors. Aluminum seems to be an ideal base, especially if the surface is roughened with coarse sandpaper, so that the paint adheres well. You can either paint on it directly or prepare it as you would a wooden panel.

OILS

The most widely used vehicle for oil painting is Linseed Oil. The purest is obtained by pressure from flax-seed. As there are less expensive methods of extracting the oil care should be taken to buy only the best of reputable dealers. Its value as a vehicle is dependent on its being but slightly vola-

tile, except in direct sunlight, and on its hardening from contact with the air. Its volatility in sunlight enables the painter to remove an excess of oil by placing his picture where it will receive direct rays from the sun. Its gradual solidification in contact with air enables him to paint with a semi-liquid material which will become so hard that his painting will resist the ordinary dangers to which it is exposed. This hardening of linseed oil is the result of oxidation, the oil absorbing about a tenth of its own weight of oxygen. From linseed oil are prepared certain siccatives which hasten the drying of the paint. Used in small quantities they are frequently of value. Perhaps no other siccative is as safe as that made by exposing linseed oil in an uncovered glass jar to the direct action of sunlight. A piece of cheese cloth thrown over the jar will keep out the dust and yet allow a sufficient circulation of air. Oil thus exposed for three or four months will clarify and become very siccative. It will have become partially oxidized and its solidification, when used as a vehicle, will be rapid. Another simple means of rendering linseed oil siccative is to tie 20 grains of powdered borate of manganese in a cotton bag, which you hang in a glass jar containing a pint of oil. Place the jar in a pan of hot water and let it simmer all day at the side of the stove. Watch it that it does not get too viscous and at night remove the bag and let it cool. Pour it into a bottle just the right size, cork it and let it settle for about a month. Pour off into another bottle without disturbing the deposit and you will have a home-made "drying-oil" safer than the compounds of doubtful manufacture which you now buy of the color merchant.

As the solidified linseed oil tends to darken with age it is well not to be too lavish in its use. It is also well to avoid an excess of oil when laying in on a white ground, for the oil will be absorbed into the ground, darken it, and the painting will lose a portion of its brilliancy. Holman Hunt, the English Pre-Raphaelite, told me that he considered that the marvelous preservation of his own paintings, some of them over fifty years old, was due to his using no more oil than was absolutely necessary. Not only did he use no medium, but he dried the excess of oil in his colors by squeezing the more oily ones directly from the tube onto a sheet of blotting-paper. Moreover, he never glazed nor even repainted without scraping down to the white ground. It is perhaps well to avoid such colors as require a very large proportion of oil in their manufacture or, at least, not to use them in the lighter portions of the painting. These colors are Raw Siena, Burnt Siena, Raw Umber, Burnt Umber and Ivory Black.

Throughout the Renaissance much difficulty was found with the effect that linseed oil had upon the blues—turning them green. The precautions to take are to avoid using oil as a medium with the various shades of blue and not to oil the blues out when they strike in.

A better medium for blues and violets in Poppy Oil which is pressed from the seeds of the opium poppy. Less siccative than linseed oil, it may be used whenever you wish to keep your painting wet. By placing your freshly-painted canvas in a dark closet the hardening of the oil is further retarded. As it darkens less than linseed oil it is a better medium, not only for the blues and vio-

lets, but for all the lighter shades. Its introduction at the beginning of the Seventeenth Century tended to drive out the use of Nut Oil, which was pressed out of the kernels of walnuts.

PIGMENTS

The pigments known to the ancients and to the painters of the Renaissance were less stable and far less varied than those of our times. Of Whites they had but one, Flake White, although they at times prepared a white from pulverized ivory to mix with Orpiment. Their Reds were almost the same as ours save that we have recently added Cadmium Red. In the Oranges they had neither Cadmium nor Chrome. The only strong Yellow was Orpiment, not a satisfactory color, for it does not mix well with other pigments. They also had the Ochres, Gamboge, and certain Yellow Lakes. The Green pigments of the old masters were particularly unsatisfactory. Terre Verte has little body and less coloring power. Verdigris cannot be ranked as a permanent color and Malachite lost much of its brilliancy in the grinding. Of their two Blues, Lapis Lazuli and Indigo only the Lapis Lazuli was permanent. Modern science has added but little to our list of Browns and Blacks. The painters of the Renaissance made good use of these materials. The instability of their pigments forced them to study the means of preserving them, so that their knowledge of vehicles, mediums and varnishes far transcended what we know to-day.

In the variety of stable pigments at our disposal we have become so rich that it is confusing. The simpler colors of the Renaissance were almost all

natural pigments, earths, minerals, vegetable and animal dyes. There is an inherent harmony between such compounds lacking in colors which are the result of chemical reaction. Here lies the difficulty. We have a wealth of pigments which, when laid on the pallet, usually form a most inharmonious combination. Only a genius can paint with such a pallet and get harmony unless he is willing to discard whatever colors really shock. I should advise you to stick to a simple pallet, changing it to suit each picture, just as the violinist changes the key for each musical composition. Another method is to tone down any discordant color with a little Yellow Ochre.

Such methods seem to me much better than the plan of manufacturing a series of mixed tones and hues, each color in its purest tone and then each modified two or three times with a neutral gray. This scheme does simplify matters but the use of such a pallet prevents your painting in any key you may desire. Try to copy an old master with these tones and hues and you will find you cannot get at all close to the original. You have deliberately chosen to paint in one set of keys and it is just as though a violinist should decide to play all musicial compositions transcribed into C major.

When I wish to hang myself I prefer to choose my own rope.

WHITE

White Lead (*Flake White, Blanc d'Argent*) is the most satisfactory white for oil paint. The best White Lead contains two parts of carbonate of lead perfectly mixed with one part of lead hydrate. As it is virulent cumulative poison, the painter, when

smoking and eating, should make certain that his hands are free from any traces of it. As compounds of lead hasten the oxidation of linseed oil, white lead dries rapidly. As a powder it blackens in the presence of sulphides but, protected from the atmosphere when mixed with oil or varnish, it is permanent. Even as an oil paint when dry it darkens if kept from the light. Exposure to sunlight, however, restores it to its original whiteness.

Flake White is an extremely solid color becoming very hard without becoming brittle. It is this quality which enabled the old masters to load the light portions of their paintings very heavily, giving an effect of relief. I own a portrait by a Genoese artist of the Seventeenth Century. The head is in heavy impasto, the forehead and check-bones projecting from the canvas a quarter of an inch. When you close the eyes and pass your hand over the surface, you can apparently feel the bony structure beneath the flesh, so perfectly is it modeled. The entire background and all the darker portions of the painting are full of little cracks where the more brittle paint has been torn asunder but the heavy Flake White impasto is intact.

Zinc White (*Chinese White, Blanc de Zinc*), the Oxide of Zinc, is invaluable as a water-color, being unchangeable under any atmospheric conditions. Since its introduction about 1850 as an oil-paint it has come to be used more and more on the pallet. It is a bad dryer and consequently should be avoided except when you do not expect to work over your painting after the first coat is dry. It is useful when you wish to keep your paint wet several days. This can be easily done by using other slow-drying colors, such as the cadmiums

and the madders. When not at work on your painting keep it in the dark. Some makes of Zinc White ground with highly siccative linseed oil or mixed with Flake White dry more rapidly.

RED

Cadmium Red (*Rouge de Cadmium*) is the sulphide of Cadmium prepared in a slightly different manner from that used in making Cadmium Yellow. It seems quite permanent, but it is difficult to give a definite judgment of a color so recently introduced. Like the other Cadmiums it should not be used with Crome or Naples Yellow.

Harrison's Red is a color to which my attention has but recently been drawn. As I know of no pure red pigment of a similar tone I presume it is a mixture. From the experiments I made I should suppose it contained an artificial Vermilion of slight stability, for Harrison's Red darkened perceptibly after six weeks exposure to sun and rain. I shall make further experiments with this color which, to me, however, is not at all sympathetic.

Indian Red (*Rouge Indien*) is prepared usually from a haematite found in India, very rich in coloring matter, the proportion of ferric oxide at times being over 95 per cent. It has a slightly purplish hue which distinguishes it from the other iron reds, which are all yellowish. There is no pigment which will replace Indian Red. As it is absolutely permanent, it is most useful for in-door painting.

Light Red (*Rouge Anglais*) is prepared by calcining Yellow Ochre. Chemically it is Ferric oxide with slight impurities. It acts well under all conditions and mixed with all other colors.

Madders and Lakes. There is such confusion in these names that I shall not attempt to discuss their relative durability. They are all dyes extracted from substances of vegetable or animal origin combined with aluminum trihydrate, which has a powerful attraction for organic matter. The aluminum trihydrate absorbs the dye and gives the coloring matter sufficient body to be used as pigment. Chemically these dyes are all combinations of carbon, hydrogen and oxygen with varying molecular formulae. Such substances are peculiarly liable to change in the presence of water and oxygen and are, of necessity, far less permanent than the stable mineral compounds so many of which are found in a natural state. Not only are they less permanent, but they are very slow in drying, which renders them unfit for any but the outermost coat of a painting. These colors are exceptionally rich and transparent and run from yellow through orange and red to purple. Encased by a resinous varnish and used as a glaze over a body color of much the same shade the best of the Madders and Lakes are relatively safe from injury. They greatly enhance the richness of painting, but should only be used in glazes and, then, somewhat heavily to allow for the oxidation of the outer surface. I think that, used in this way, the madders are far more solid than the writers on pigments would have us believe. A visit to the Metropolitan Museum will be enough to show how safe a heavy glaze of madder is. The Ribera, Tintoretto, Veronese, and several of the primitives will convince you that lakes and madders are fairly permanent. You will notice that in the high lights they have somewhat faded, but have held wherever the glaze was thick.

The chief elements of the coloring matter of these pigments are two substances which are now prepared artificially from an ingredient of coal-tar, anthracene. These artificial products, alizarin and purpurin, have the same qualities as the Madders and Carmines extracted directly from organic matters. They seem to me however to be less rich in color and I prefer the natural Madders and Lakes to the coal-tar dyes. To extract Madder from the plant it is necessary to ferment the root, which is resolved into glucose and the various coloring substances. Cennini does not speak of Madder although there are recipes for its preparation in other Fourteenth Century manuscripts. The madder-plant, a native of Greece, was formerly extensively cultivated in Holland and Southern France. Since the introduction of the artificial dyes, the growth of this plant has greatly fallen off. Crimson Lake, the most fugitive of these pigments, is prepared from the dried bodies of a species of coccus, an insect which feeds on the cactus. The coloring matter is extracted with boiling water and a little alum or nitre. The precipitate is the crimson powder with which is prepared the cochineal lakes.

All such colors must be of unquestionable origin and it is well to buy them only of the most reputable color men. For fifteen years I have only bought of Edouard and of Blockx. They have been wholly satisfactory. Should the paint thicken in the tube do not attempt to use it. The oil has undergone a chemical change and will no longer preserve the madder or lake from oxidizing.

Mars Red (*Rouge de Mars*) is calcined Mars Yellow. It is a rich powerful red which dries

slowly. Like the other Mars colors it tends to injure lakes and madders and must therefore never be used in underpainting for a madder glaze.

Red Lead—(*Mine Rouge*) is a combination of the protoxide of lead with the binoxide. Excess of the latter gives an orange tint. This pigment is affected by the gases of our modern cities and is therefore quite unsafe. It is frequently used as an adulterant of Vermilion.

Red Ochre (*Ocre Rouge*) is an absolutely safe earth containing a large percentage of oxide of iron in place of the hydrate which is the base of Yellow Ochre. Its color is modified by the usual diluents of the iron earths—clay and silica.

Venetian Red (*Rouge de Vénise*) A ferric oxide, was formerly prepared from a native earth called red haematite found in the island of Elba and elsewhere. It is prepared by calcining copperas. When pure it is absolutely permanent and may be mixed with any of the other colors on the pallet.

Vermilion (*Cinnabar*) is a mineral (sulphide of mercury) found in China, various parts of Europe and in California. It is also produced artifically. Native Vermilion is however more permanent. It has until within a very few years been considered a relatively safe color. Used by the great masters of oil paintings from the time of Van Eyck, there has seldom been complaint. Northcote advised Reynolds to use it, rather than to trust to the fugitive lakes. As late as 1847, Eastlake writes of Vermilion as being a permanent color. But from the middle of the last century the trouble begins, and, in Turner's work, we find many examples of Vermilion turning dark. Although it is a color

which has stood the test of two thousand years, it is condemned by the modern writers, notably by Moreau-Vauthier, who advises the use of Cadmium Red as a substitute. It may well be that the chief difficulty with our modern pigment is that it is not sufficiently ground, for the testimony of the older writers is that Vermilion should be ground for a long, long time. Indeed, Cennini says that "if you were to grind it every day for twenty years it would be but the better and the more perfect." The other trouble is the substitution of cheaply prepared artificial Vermilion for the native mineral. It is also at times adulterated with Red Lead.

Save for some Vermilion I recently bought of an American manufacturer which speedily darkened I have had no trouble with this pigment. Blockx grinds a color which he calls Cinnabar de Chine—true native Vermilion. It is a very beautiful color which in my own experience has not altered.

ORANGE

Cadmium Orange (*Orange de Cadmium*) is normal sulphide of Cadmium. It is of the utmost importance that it should be well prepared, as in its manufacture there is normally an excess of pure sulphur, the presence of which would render it unfit for oil painting. Pure Cadmium Orange when mixed with Flake White prevents the tarnishing of the white by sulphuretted hydrogen. It however attacks Emerald Green and Chrome Yellow, both of which colors you should exclude from your pallet except when sketching. Its only other fault is that it dries rather slowly.

Chrome Orange (*Orange de Crome*) is formed by the association of chromate of lead and the oxide. Having the same qualities as Chrome Yellow, it should only be used as a substitute for Cadmium Orange in sketching.

Golden Ochre (*Ocre d'or*) is merely a natural Ochre of unusual purity. To obtain its brilliancy ordinary Yellow Ochre is sometimes mixed with a strong organic orange. Therefore buy a Golden Ochre ground by a reputable color manufacturer.

Mars Orange (*Orangè de Mars*) is a Mars Yellow which has been calcined with a little nitre. It has the same properties as Mars Yellow.

YELLOW

Aureolin (*Jaune de Cobalt*) is a compound of the nitrites of potassium and cobalt. It is a brilliant pale yellow of great durability when pure. It is better not to use Aureolin with the lakes, for it not only injures them, but also loses much of its own brilliancy.

Cadmium Yellow (*Jaune de Cadmium*), sulphide of cadmium, is a finely ground Cadmium Orange bleached and a times adulterated to give it its pale color. When properly made it is quite safe as an oil color, but it is essential that it should not contain free sulphur.

Chrome Yellow (*Jaune de Crome*) is a bright yellow pigment, chromate of lead. In association with oxide of lead it becomes orange or even red. It is acted upon by free sulphur and loses oxygen when brought into contact with lakes and madders. Thus it not only injures them, but a portion of the Chrome Yellow is converted into green oxide of

chromium. It should therefore only be used because of economy in sketching. Avoid the lakes and madders when using Chrome Yellow.

Gamboge (*Gommegutte*) is a gum-resin prepared from a yellow resinous juice found in the bark of a tropical Asiatic tree—Garcinia. Its name is derived from Camboja, from whence it originally was imported. In commerce it can be bought either in amorphous lumps of doubtful purity or in purified cylindrical sticks known as pipe Gamboge. As sold in tubes ground in oil it is usually of very slight value, as it fades rapidly. The old masters, however, mixed it with amber or copal, and, by using selected materials and following closely the recipes which were then practised in the studios, they were able to prepare an almost stable color. A much better oil pigment than that in general use to-day can be made easily. The coloring matter of Gamboge lies wholly in the resin, soluble in ether. This must be separated from the gum which dissolves in water.

To accomplish this pulverize the pipe Gamboge. Put it in a bottle and wet the powder with pure water. Pour ether into the bottle, a little over twice the bulk of the powder, and shake until the resin is dissolved by the ether, the gum remaining as a deposit.

Pour the resinous solution into a glass jar and add a quantity of Poppy Oil and of Oil Copal Varnish, each about a third that of the solution. Place the jar in a basin and let the hot water run. Keep it in the hot water and let the ether evaporate until the consistency is what you would wish for painting. It should then be put in collapsible tubes which may be bought in New York of Eimer

and Amend. Do not forget that the fumes of ether are inflammable.

Gamboge prepared in this way should prove a valuable color for the decorator. Although not entirely permanent, it gives a richness to surface colors and to gold and silver leaf which cannot be attained by any other means.

Indian Yellow (*Jaune Indien*) is an organic yellow prepared in Bengal. The crude color is partly soluble in water and must be washed repeatedly. If well prepared Indian Yellow is permanent, remaining almost unchanged in strong sunlight. On account of its origin and the frequent use of sal-ammoniac in its preparation, the color is often so akaline as to attack the oil in which it is mixed. It is therefore well to test Indian Yellow. Let a portion dry on the pallet. If it can be washed off with pure water it shows that a large portion of the oil in which it was ground has been converted into soap.

Italian Earth (*Terre d'Italie*) is an ill-smelling but perfectly safe ochre.

Lemon Yellow (*Jaune d'Outremer*) is the name properly applied to chromate of barium but unfortunately there is no uniform system of nomenclature. The chromate of barium is perhaps the most permanent of all the yellow chromates. It is fairly opaque and covers well. In using Lemon Yellow it is as well to avoid the Madders, the Lakes and other organic pigments.

Mars Yellow (*Jaune de Mars*) is a ferric hydrate artificially prepared. Although stronger than the natural Yellow Ochre it also contains a large proportion of diluents such as gypsum and alumina. When carefully prepared Mars Yellow

is permanent, but it sometimes reacts injuriously on the lakes and madders and is a slower dryer than Yellow Ochre. When Mars Yellow is submitted to heat with a small amount of nitre it yields products of various colors—Mars Orange, Mars Red, Mars Brown and Mars Violet.

Naples Yellow (*Jaune de Naples*) when pure is an antimoniate of lead, but the Naples Yellow of commerce is usually an adulterated Cadmium or Chrome Yellow. It is one of the earliest pigments to have been used, being found upon bricks on the site of Babylon. It is a permanent yellow save that it decomposes from contact with certain metals and that it injures the lakes and yellow madders.

Orpiment is a native mineral of volcanic origin. It is an arsenious sulphide called yellow realgar. Cennini speaks of it as being unfit for fresco on account of its turning black when exposed to damp. It cannot be mixed with the lead or copper pigments. It was therefore largely used pure as a glaze especially over yellow ochre. The Flemish painters, Van Dyck in particular, admired its rich tone which at that time could not be imitated. The expedients used to insure its permanency were those which were used with Gamboge and the Lakes. Their recipes have many of them come down to us but the terms used are so vague that they are difficult to interpret. They all involve the locking in of the pigment with a resinous vehicle.

Strontian Yellow (*Jaune de Strontium*) is chromate of strontium. It is a pale yellow which may be substituted for the lighter shades of cadmium. I do not use it, but it is said to be durable when pure.

Yellow Ochre (*Ocre Jaune*), one of the earliest pigments used by man, is a natural pigment found in all portions of the world. The coloring matter is always a ferric hydrate (ferric oxide chemically combined with water in varying proportions). In good Yellow Ochre other ingredients enter in, usually amounting to over half the weight—such as silica, common clay and sulphate of barium. It is therefore not surprising if Yellow Ochre varies greatly in color. It darkens slightly in drying. Otherwise, if the color has been properly prepared, it is absolutely unchangeable and has no effect on other colors.

Zinc Yellow (*Jaune de Zinc*) is pale yellow of doubtful durability. It is chromate of zinc and less stable than the chromate of strontium. Moreover its color is to me distinctly unpleasant.

GREEN

Celadon Green (*Vert Céladon*) is a rich green prepared from the mineral celadonite. It is absolutely permanent, but is relatively slow in drying.

Chrome Green (*Vert de Crome*), an oxide of Chromium, varies greatly in color according to the methods of preparation. It is an absolutely permanent although not a very brilliant green. Unfortunately it is frequently imitated by mixing Prussian Blue with chromate of lead, a combination of far less stability.

Cobalt Green (*Vert de Cobalt*) is a combination of oxides of Zinc and Cobalt. It gives a rich blue green which I have heard much praised. Edouard makes a very beautiful and pure Cobalt Green.

Emerald Green (*Vert Veronese*) is prepared from verdigris and arsenic which combine to form an aceto-arsenite of copper. The color is a deadly poison and is blackened when mixed with vermilion, ultramarine or the cadmiums.

Malachite is a green mineral which has been used for painting from the earliest times. As a stone it is familiar to every visitor to the Roman churches. The purest specimens of Malachite are pulverized with great care and it is ready to be ground in oil. Chemically it is a combination of a hydrate and a carbonate of copper. It is fairly permanent but of no great coloring power.

Terre Verte (*Terre de Verone*) is usually prepared from the mineral glauconite, the coloring matter of which is a silicate of iron. It has very little body, dries slowly and tends to darken with time.

Verdigris (the *Viride Graecum* of the writers of the Fourteenth Century) was for centuries the standard green. It is very poisonous basic acetate of copper, which blackens from humidity. The painters of the Renaissance used every precaution to insure its permanence by mixing it with a resinous vehicle. At times they were successful as may be seen in some of the work on wooden panels by the early Flemish masters. The later Venetians were less successful on account of their having substituted canvas for wood. There is no longer any reason for the use of Verdigris save, perhaps, in the restoration of paintings.

Viridian, Emeraude Green (*Vert Emeraude*) is a hydrated sesquioxide of chromium. Ever since its introduction as an oil paint in the middle of the nineteenth century this has been one of the most

valued paints on the modern pallet. It is very pure bluish green, intense yet transparent. It can be safely mixed with all the other permanent colors and dries rapidly. Mixed with Burnt Siena it makes an ideal olive for an undertone for portraiture.

BLUE

Antwerp Blue is a lake formed from Prussian Blue. It is less strong than Prussian Blue, but otherwise has the same characteristics.

Cerulean Blue (*Bleu Cœruleum, Bleu Céleste*), is a mixed blue containing binoxide of tin and oxide of cobalt. It is a permanent pigment of no great coloring power. With Viridian and Ultramarine and Flake White you can imitate Cerulean Blue so well that it is not a necessary color.

Cobalt Blue (*Bleu de Cobalt*) according to Merimée was discovered in 1802 by Thénard. It is, however, usually no longer made from his formula, which was a combination of alumina with the phosphate of cobalt. In the more usual formula (Wenzel's) oxide of cobalt has replaced the phosphate. There is also an arseniate of cobalt sometimes used instead of the phosphate. All these blues are in every way satisfactory when carefully ground in oil.

French Ultramarine (*Outremer Guimet*) was discovered as a substitute for Lapis Lazuli simultaneously in 1814 by Guimet in Paris and Gmelin in Tubingen. The color sold as Permanent Blue is usually this artificial Ultramarine. It contains the same elements as Lapis Lazuli—silicon, aluminum, sulphur, sodium, and oxygen. When

properly prepared without an excess of sulphur it is a powerful blue and is quite permanent.

Indigo is a vegetable color of Asiatic origin. It was used as a dye from the earliest historic times. Absolutely unsuitable for oil painting, its place on the palette has gradually been replaced by Prussian Blue and Ultramarine. As it was imported from India into Holland in large quantities during the sixteenth century it was probably the blue in use by the landscape artists there. That employed by Van Goyen and Salomon Ruysdael has entirely disappeared in certain of their paintings.

Lapis Lazuli Ultramarine (*Outremer*) is prepared by heating the mineral Lapis Lazuli in a crucible, and grinding the disintegrated residuum. On account of the difficulty in preparing and purifying the pigment and the scarcity of the Lapis Lazuli of a fine grade, this color is very expensive. It was the standard blue from the beginning of oil painting until it was replaced early in the nineteenth century by Guimet's artificial ultramarine.

Prussian Blue (*Bleu de Prusse*) varies greatly in composition. It has great coloring power, but is not absolutely permanent. Like Raw Umber it seems to come to the surface with time and to penetrate other colors.

VIOLET

Cobalt Violet (*Violet de Cobalt*) is the arseniate of Cobalt. It is an absolutely permanent color and does not affect other pigments. It dries fairly rapidly and in landscape work it can take the place of the fugitive violets formed by the madders and cobalt blue.

Manganese Violet (*Violet Minerale*) is a metaphosphate of manganese which is absolutely permanent. I have not used it, but it is strongly recommended.

Mars Violet (*Violet de Cobalt*) is produced by calcining Mars Yellow with a little nitre. It is a rich color useful for portraits and other work indoors, but is not at all the violet needed for modern impressionist painting. Although permanent it has the faults of the other Mars colors, being a slow dryer and tends to injure the madders and lakes.

BROWN

Brown Madder, Bitumen, Mummy, and Asphaltum are all made from organic matter. The first is one of the least permanent madders. The last three are all close chemically to tar and are unfit for painting.

Burnt Sienna (*Terre de Sienne brulée*) is obtained by calcining Raw Sienna, which calcines the organic matter and converts the hydrate into oxide of iron. This makes it absolutely permanent and greatly lessens the amount of oil necessary to properly grind it. It has no effect on other pigments.

Burnt Umber (*Terre d'Ombre brulée*) is prepared by the calcination of Raw Umber which converts whatever organic matter there may be into charcoal. It would seem that it ought therefore to be more permanent than Raw Umber, yet authorities differ on the subject.

Mars Brown (*Brun de Mars*) is a rich color usually produced by heating Mars Yellow with a little nitre. Well prepared it is absolutely per-

manent. Like the other Mars colors it sometimes is injurious to the madders and lakes and has the defect of drying slowly.

Raw Sienna (*Terre de Sienne*) is in chemical composition only Yellow Ochre with a smaller amount of diluents and a certain amount of oxide of iron mixed with the hydrate. Found near the surface in Tuscany it contains traces of organic matter. This and the fact that it requires somewhat over twice its own weight of linseed oil when ground as an oil-paint has made me hesitate to use it.

Raw Umber (*Terre d'Ombre*) is natural earth color containing ordinarily a large proportion of oxide of iron and of dioxide of manganese. It frequently contains traces of organic matter, so that it should only be bought of a reputable colormaker. It is strong, not a good dryer, and my own experience has been that it strikes through other color much as Prussian Blue does.

Transparent Brown (*Brun Transparent*) is a color of varying chemical composition. Blockx makes a very beautiful Brun Transparent, which, mixed with Ultramarine Blue, makes a rich black. It dries rapidly and is quite permanent.

Van Dyck Brown (*Terre de Cassel*) is a soft variety of lignite. Although this color varies greatly in its composition it contains humus or other organic matter which it seems safer to avoid.

BLACK

Ivory Black (*Noir d'Ivoire*) is charcoal prepared from waste ivory. It is an absolutely permanent pigment which is unfortunately a very slow

dryer. It must, therefore, never be used in the lower layers of a painting. It is also necessary to allow a picture in which any black has been used considerable time to dry before varnishing it. Ivory Black is frequently adulterated with Bone Black, a safe charcoal pigment prepared from horn and bones.

Lamp Black (*Noir de Fumée*) is prepared from the soot of resins and oils. Freed from tarry products it is a safe slow-drying pigment.

Vine Black (*Noir de Vigne*) is a vegetable charcoal, somewhat bluer than Ivory Black. It is sometimes adulterated, Lamp Black mixed with Indigo, to give it a blue tone. Such a combination is unsafe.

Ultramarine Blue and Transparent Brown give a dark neutral tone, almost black. This mixed black dries rapidly and should therefore be used whenever a black is desired in the underpainting.

HOW TO TEST PIGMENTS

The chemical analyses necessary to determine slight adulteration of colors are outside the province of the painter. But it is his duty to test the durability and strength of his paints. The durability is easily tested. Tack a strip of canvas about two inches wide on a board. Paint across it the color to be tested, below that the color mixed with Zinc White, then the same color mixed with Flake White, and below that in turn the color mixed with a good Rose Madder. Cut the strip in two so that on each piece you have the color itself and the three mixed tones. Tack one of the strips outdoors where it will have a southern exposure. Keep

the other in a relatively dark room. At the end of six weeks place the two strips together and see if there has been any change in the strip exposed to the sun. In case the paint itself has altered or the paint mixed with Zinc White it shows the color is entirely unfit. If it has changed only when mixed with Flake White it shows an excess of sulphur. If it has altered only when mixed with Rose Madder it shows that it contains too much oxygen to be mixed with the lakes and madders. So much for the durability.

The other test is one to apply to their relative strength. This should be applied especially to the expensive colors—the cadmiums, madders, Cobalt Violet and Aureolin. These colors are usually mixed with about two-thirds their weight in oil. The prices of the dry pigments vary from $18 to $30 a pound, yet there are manufacturers selling these colors ground in oil for $6 a pound. It is extremely easy to mix a large proportion of a colorless base like alumina with the pigment without detection. It converts the color into a lake with no apparent diminution of strength until you mix it with other colors. Then you find that your adulterated pigment has no power. To test two makes of any of these colors take two equal amounts of a standard Cobalt Blue and mix each with an equal quantity of one of the colors to be tested. Then compare how much each has altered the tone of the standard blue and you will have a measure of the relative force of the two samples. I have just tested two samples of Rose Madder, one made by Blockx, the other by a German maker. The Blockx Rose Madder mixed with Cobalt Blue made a rich purple, the German sample did not

alter the blue appreciably. Yet by itself the German Rose Madder looked fairly strong. To test two makes of blue you should use Yellow Ochre as the standard.

ESSENTIAL OILS

There are four essential oils commonly used as diluents of the color whenever the use of a heavier medium would render the paint too viscous. They enable the artist to put on a thinner layer of color or to draw finer lines with the brush than would be possible with pure paint. Theoretically, after evaporation they should leave no trace of their use.

Spirits of Turpentine and Spike Oil are the most commonly used of these diluents. Unfortunately, even when pure, they have a strong tendency to oxidize, becoming somewhat viscous and leaving, after evaporation, a sticky resin which is very slow in hardening. Oxidized they are not fit materials for the painter. Buy them therefore in bottles sealed by a reputable manufacturer. Place in the bottle as soon as you open it two or three small pieces of hard quicklime and keep the bottle corked. This will counteract in large measure the tendency that these essences have to become resinous.

Petroleum furnishes an essential oil, or rather a series of essential oils which are valuable. There are some which boil at a relatively low temperature, and are highly explosive. These are valuable when you wish to hasten the drying of the paint. There are others which do not boil under 150 degrees centigrade. They are not dangerous and retard the drying of the paint materially. Ludwig in Germany and Vibert in France have found means of purifying these essences and I believe their

products are entirely satisfactory. Ludwig has a series of essences and oils derived from petroleum which dry with varying rapidity. With them the artist can regulate not only the speed with which the painting dries, but also the degree of gloss. The only objection I have to the Ludwig system is that his paints are a little dull for impressionistic landscape work.

Benzine, the last of these essential oils, is highly explosive. The benzine of commerce is hardly fit for an artist's use because of an impurity which it contains—thiophine, a compound of sulphur. Pure benzine however may be had, an almost odorless essence.

RESINS, VARNISH AND WAX

There are many varieties of resins varying greatly in hardness, solubility and melting-point. All however are vegetable in their origin, being secretions from plants which have oxidized and hardened. From the oxidization of turpentine a viscous resin is formed most injurious in its effects on painting. Amber, a fossilized resin, and some of the copals and mastics fuse only at a temperature of about 300° centigrade. Such resins are extremely hard and relatively insoluble. Dissolved in spike oil, turpentine, linseed oil, these resins yield a series of mediums and varnishes which, properly used, tend to greatly lengthen the life of an oil painting. Dissolved in alcohol they give weak varnishes of slight value which, used as mediums are disastrous, for such compounds cannot unite with linseed oil. They prevent the necessary adhesion between successive layers of paint. Wax

introduced into the body of the paint has this same effect.

An old Dutch recipe for making an Amber Varnish which was also used as a medium for such fugitive colors as Gamboge, Orpiment and the Lakes is the following: "Take half an ounce of aloes, half an ounce of amber, pulverise both and set them on hot coals in a glazed earthen vessel. The heat at first should not be too great. As soon as the amber is melted throw in boiling oil, stirring well with a wooden spatula. Let it cool and strain through a cloth."

Used as mediums amber and copal alone are desirable, as mastic is brittle and disintegrates too easily. I have painted with solutions of amber prepared by Blockx and with others mixed according to the formulae of Ludwig. Both seemed satisfactory and after several years I have perceived no alterations from their use.

Roberson's Medium has been used successfully for seventy-five years. As it is put up in tubes it is most convenient for outdoor work, as is also Megilp, but the latter contains mastic and should be avoided. A trustworthy medium can be made with three parts copal varnish, two parts linseed oil and, according to the individual taste, from three to five parts double rectified spirits of turpentine.

Vibert claimed that the resins used in making varnishes were quite unfit but that in all resins a small amount of an unalterable "normal" resin was present. This "normal" resin he is supposed to have separated and to have dissolved in an essential oil of petroleum. From this he made a retouching varnish, a medium, and a final varnish

for the finished painting. All three give good results.

Varnishes should be made of copal or amber in order to resist the action of time. Mastic gives a very beautiful varnish, but its effect is only temporary. It is, however, relatively easily removed by continued rubbing with the fingers, but it is better to leave such work to experienced cleaners. One simple expedient which will frequently clarify an old varnish is to clean it with soap and water, and the next day, if it is thoroughly dry, give it an even coat of pure alcohol laid on very thin with a broad sable brush. Great care must be taken not to rub up the varnish.

The waxes used in the arts are of various origin. Beeswax was the most common vehicle used for painting in the Greco-Roman portrait heads recently discovered in Egypt. The dry colors mixed with melted wax were applied to the heated panel with knives and brushes. A complete painter's outfit was found recently in a tomb at St. Médard in France. Beeswax should be purified and bleached, which renders it heavier, harder, and slightly less soluble in essential oils. Chinese and Japanese wax are secretions of plants caused by the attack of an insect. Paraffin is a wax derived from petroleum and is even more durable than beeswax. It should always be purified. There are several varieties differing in specific gravity and melting-point. Those which are heavy and melt with geater difficulty are more suited for artistic use. Unfortunately they are less soluble in the essential oils.

It is most unfortunate that an oil painting when completed is in no condition to stand the ravages of time. Certain portions have dried in, the vehicle

having been absorbed by the lower layers of color. The oxygen and the deleterious gases present in the modern atmosphere have thus entry into the paint and their action will soon be apparent. To prevent this action artists have had recourse to a lesser evil, varnish, which keeps the air from injuring the picture. These varnishes, however, also become oxidized with time and must be removed. In removing the varnish picture cleaners have often taken off the outermost layer of paint. This is the reason that so many of the paintings of the Italian Renaissance have come down to us mere shadows of their former beauty. I believe that this incalculable damage might easily have been prevented by the use of a dissolved wax.

After considerable research I have been able to prepare a wax finish for oil paintings safer, I believe, than any in general use. The difficulties of the present method of preserving paintings have long been manifest. Two dissimilar substances, the paint and the varnish, have been so intimately associated as to become incorporated one with the other. These have contracted and expanded differently and the result has been that the weaker body has suffered from the action of the more powerful. From time to time the old varnish becomes so brown that it obscures the painting and must be removed. The varnish and the paint have the same solvents and formerly the restorer took off the varnish with alcohol until he got down to hardpan and then repainted the portions where he had taken off much of the surface paint. I have prepared a finish of a compound wax soluble in the essential oils but not in alcohol. Rubbed onto a painting a day previous to varnishing it acts as a

buffer between the varnish and the paint. The varnish may be removed at any time with alcohol without fear of damage to the paint, which is protected by the wax. The wax may then be dissolved with double rectified turpentine without injury to the painting. I have also prepared a compound "Amberwax." Either of these preparations may be used as soon as the pigments are thoroughly hardened as a final finish. The "Amberwax" gives a somewhat harder and more glossy finish on account of the dissolved amber. It is my intention to put on the market both of these preparations in collapsible tubes.

METHODS

Even if you have the best of materials at your disposal unless you use these materials wisely your painting will darken with time and will be liable to crack and split off. Unfortunately for your present ease of mind there is no one right method of painting suited for you all, but there are many wrong methods. It is my province to warn you against them, so that in choosing a manner of painting adapted to your needs you will make no mistake.

Most students are unaware that one should never paint on any base which has served for another subject without sandpapering the old surface and giving it a heavy coat of Flake White. This coat must thoroughly harden before the panel or canvas is in condition to be used. It is however far better to use a new base and your first preoccupation after selecting your subject, should be to see that your panel or canvas is in good condition. If it has been primed with oil

it should be washed with soap and water to remove any superficial grease. Rinse it well and place it in the sun to dry. Then comes the question of blocking in your picture. This first step will influence the entire progress of your work, so it is important that you start right. The average artist draws the subject in with charcoal, which is then fixed with a pure shellac fixative. Then with strong color the painting is begun with heavy impasto right over the drawing. But, alas, his mind is ever on the outlines beneath and as he nears them the hand becomes timid and the result is that his painting never gets a real "painty" quality, but looks like a draughtsman's technique. This was not the method of the old masters. They began the work by laying it in with rapid-drying colors, using some essential oil as a medium. The underpainting was usually in monochrome and massed in thin washes of color. My own preference when laying in with monochrome is to mix Viridian and Burnt Siena, which make a soft neutral olive. The advantage of such a technique is apparent. The difficulties of painting are overcome one by one. First you turn all your attention to construction, and once that is out of the way you can give your mind entirely to color. If you do not wish to use a monochrome in blocking in, paint with a simple pallet of rapidly-drying colors. An iron red, Yellow Ochre, and Guimet's Ultramarine will usually be found sufficient. Let your first painting be thin and let each layer dry before you retouch. As you approach completion you may use mediums and oils more freely.

At all times remember that paint becomes transparent with age, and that any changes of outline

you make in your painting necessitate scraping off the under paint. Otherwise in time the forms of the under painting will reappear. There are several such cases in the work of Velasquez where he has obliterated old work, not entirely successfully, for in time the under-painting has come through, and the hero has four legs, instead of the more customary two. Moreau-Vauthier cites an interesting example in the work of Henner not visible as yet to the eye, but revealed by the photograph, the Recumbent Nymph in the Luxembourg Gallery.

In order that your painting should not darken you should have a light non-absorbent ground and you should never paint a light tone over a dark. Rather than do that soften the surface with pure benzine or turpentine and scrape down until you come to a light layer of paint and build up afresh. In all the preliminary stages keep your painting in a lighter key than you desire for the completed picture. Darkening is also caused by the excessive use of oils and mediums. This danger may be avoided by placing the painting in direct sunlight, which dries out the excess of oil. The beneficial effect of sunlight can hardly be overestimated. In order to be sure that your painting will not crack it is essential that your underpainting be thoroughly dry before you continue your work. This can only be done if you avoid all oily and resinous mediums in your preliminary work and do not use such slow drying colors as the Lakes, the Cadmiums, and the blacks. Keep these as a reserve force to use when you finish the painting should you then find it necessary.

In regard to glazes I have a prejudice against them, for they are so frequently used to hide faulty

construction. The greatest objection to them is their fragility, but this can be somewhat obviated by glazing as soon as the underpainting is sufficiently dry not to be rubbed up by the brush. This will insure the incorporation of the glaze into the body of the painting. As a medium I would advise Roberson's or else two parts linseed oil mixed with a third part spirits of turpentine. Let the sunlight evaporate any excess of oil. However, glazing is never over safe and should be kept as a final resource when other methods fail.

How perilous the abuse of mediums and glazing may be is shown in the work of one of our greatest living artists. The full glory of the art of Albert Ryder is even now but felt by intuition. We know what his works must have been, and we are still moved by them, but it is just as we are moved by architectural ruins. It seems to me that it is nothing short of a crime that a man so richly endowed should not have been taught, at the very beginning of his career, a sound practise of painting.

Not only does the painting need plenty of light while you are at work but after it is completed it should still have freqeuent short sun-baths right up to the time of varnishing. This advice, however, can only be followed if your paints are all stable, for sunlight hastens the decomposition of such colors as the Madders and Lakes. The baneful effect of direct sunlight is scarcely perceptible in the action of the reflected light of the ordinary room. The warm backgrounds and hangings absorb almost all of the actinic rays. The pigments of Turner were so fugitive that they have not withstood even this subdued lighting, and the only Turners which retain much of their pristine color are the canvases which

were so long kept in the vaults of the National Gallery in London. Do not varnish your painting for a year after its completion. Personally I prefer a dull gloss and, in the compound Amber-wax which I have prepared, it seems to me I have found an ideal finish for all paintings in a light key.

The secrets of the old masters have ever had a great attraction for many artists. In so far as the research into their methods has as its aim the desire to put the practise of painting on a more solid basis, it seems to me that it should in every way be encouraged. But the desire to find out the intimate details of the craft of any one artist, so that one may imitate his technique, seems only less morbid than prying into the history of his love affairs. Réné Piot, in his attempt to resuscitate the art of fresco painting, has gone about it in the right way. He read the old books and manuscripts on the subject, he made careful copies in fresco of several masterpieces of the early Italian Renaissance, and, having learned the general principles of the art, he set about doing original work. A letter of introduction from Mr. Piot was an open sesame to the home of that modern master of the art of hospitality and of French prose, André Gide. The living room in his villa at Auteuil furnishes just the right setting for Piot's mural decoration, the first important work in fresco since the Renaissance. It is a wonderful Arabesque of nude figures in virile colors, unlike any of the old frescoes and yet, in every way, a worthy exponent of a great tradition. So should your own research into the secrets of the old masters lead you into new fields. It would be well to copy a few of their paintings so as to learn the general principles of their art, and then adapt this acquired knowledge to your own needs.

Nothing has been more fatal to art than haste. Coming down from the early Renaissance we can notice an ever increasing desire to complete the painting as rapidly as possible. With Rubens and Fragonard one feels the very fecundity of their imaginations forced them on. With us it seems to me it is but a nervous impatience. We want to see how a thing is going to look when finished and, not having the imagination to see it with the mind's eye, we rush through. The result is that our paintings are lacking in the qualities which come from a thorough craftsmanship. Not only do we paint too rapidly, but we varnish too soon (one should not varnish until a year after finishing a painting) and in consequence our pictures crack and the paint comes loose.

What we most need to-day in art is a desire for sound craftsmanship. That must precede good art. Our second great need is absolute sincerity of expression. That will accompany good art.

COUTURE'S METHODS OF PAINTING.

Now that I have told you how you may paint so that your work may last for centuries, I should like to translate for you Couture's directions to a young painter. Couture was the great art teacher of the middle of the nineteenth century and his advice is therefore the most authoritative of that epoch. How utterly unwise it was in practise you will at once appreciate, and it will give you an understanding of the causes of the rapid deterioration of his own paintings and of those of his contemporaries, Here is what Couture says to the novice:

"Let us begin. Trace your drawing on the canvas; charcoal is better than chalk; once your

forms well established, you mix what we painters call a sauce, a mixture of a good thick drying oil and turpentine half and half. Then place on your pallet the colors for laying-in—Ivory Black, Bitumen, Brown Red and Cobalt. With Brown Red and black you can mix a tone of bistre or, if you prefer, you may use Bitumen, Brown Red and Cobalt which will give the same result. Long sable brushes are necessary to trace the drawing. Now to come back to our charcoal drawing. We are going to paint and the charcoal might mix with the colors and injure them. With your mahl-stick beat the canvas as you would a drum; the charcoal will fall, leaving just enough to guide your brush. Take your sable brush, dip it in the sauce and then in your bistre tone, and trace your outlines. Once they are established, mass your shadows and you have a sepia monotone in oil. Let this first preparation dry. Indeed its execution should take an entire séance or even the whole day. But a night will do it and the next morning you take up your work with the same preparation, enriching your shadows without going over the lights.

"Clean your pallet and set it with the following colors—Flake White, Naples Yellow, Yellow Ochre, Cobalt Blue, Vermilion, Brown Red, the Lakes, Burnt Siena, Bitumen, Ivory Black. As to mixing these colors I grant you entire liberty; experiment, you will fail, but what of that? Be above all and in all things sincere. That is all I can tell you and I would not wish to tell you more."

ART A CITADEL

Art may well be likened to a citadel with many outworks defended by an army so strong and so well furnished with all necessities that the besiegers must be satisfied with the capture of an outwork from time to time, which very possibly may later be lost. The citadel is besieged by three armies working almost independently of one another, each so self-satisfied as to depreciate the value of the other two—Realists, Classicists, Romanticists despising one another.

Let us look at what they have each accomplished without taking sides. The earliest primitive art, so far as we know, was Realistic. It was followed by an art in which the primary object was to decorate the utensils of daily life and the walls of the home and temple. This art was a desire to express an innate sense of order, and was therefore Classic. Later artists arose who desired to express emotion primarily and their art we call Romantic. To return to the simile of our citadel, the Realists have always been the narrowest intellectually of these three armies. Their followers have never wandered into the camps of the others and consequently do not understand their aims. Art with the Realists is but to hold the mirror up to Nature. In the past they have had but few of the great painters in their ranks. Leonardo and Holbein, despite their classicism, had very strong sympathies with Realism, but the purely Realistic painters can almost be numbered on one's fingers—Franz

Hals, Hogarth, and, in our day, Courbet, Menzel, Claude Monet, Liebermann and Zorn. Through the narrowness of their intellectual life they are prevented from even seeing in a broad way the nature they seek to imitate. Only with the advent of Claude Monet do we find truth to Nature among the Realists at all to be compared with the fidelity of the great Classicists and Romanticists.

As Realism has at present more devotees in America than either Classicism or Romanticism, let us see just wherein we fall short of the European Realists. Taking the work of Claude Monet as a standard we find in his work a fidelity to local conditions almost wholly lacking in our own art. The Normandy series of paintings, the Southern France series, the Thames series, each has the true local feeling of the country. No Méridional has ever painted the Riviera with so much truth to the local atmosphere as Claude Monet, nor has any Englishman so painted the Thames. It is indeed to our shame that the painting with the strongest American flavor is the work done by Degas in Louisiana. You should stop painting imitation Corots, Rousseaus or even imitation Claude Monets. Open your eyes wide, get the local tang. There's as much of it right here in Maine as there is in Monet's Normandy. But to get it you must live in touch with the native Ogunquit life, just as Monet wears the sabots and the peasant dress of Giverny.

The Classicists have a harder fight, for on their side most of the outposts have been taken. It doesn't do to repeat what has been said before and it is difficult to say anything new. They have ever

gone deep into the study of Nature, far deeper than our modern Realists, and that increases the difficulty. My advice to the young classicist would be to spend half his time working from Nature and half to composition. Spend much of the time devoted to composition in getting steeped in the classical work of all epochs, not neglecting the art of the Extreme Orient. A trip to Southern Europe is almost a necessity.

The Romanticists have it somewhat easier than the Classicists, for their work proceeds from their own emotions. Then, too, there is a wider territory still to conquer. Let them also in studying devote half their time to careful work from Nature and the other half to the expression of their feelings.

With sincerity and diligence we may hope to conquer new outposts of the citadel. Then some of our work should be of interest to future generations.

OF INDIVIDUALITY

Almost from earliest childhood there are three classes into which we may divide art-loving children according to their temperaments. There are the practical children who will be realists later on; the orderly children, classicists by birth; and the dreamy, poetic children who should be romanticists. These children, were they allowed to follow their inclinations, would gradually each evolve a style of work fitted to express his character. But the art-school steps in and our children come out men and women more alike than peas in a pod. Moreover, as the practical people are in a majority in America, they dominate the others and our children all come out realists.

There is another ideal. The teacher ought to be like the gardener who helps each plant to produce, under the most favorable conditions, its utmost of flower or fruit. He does not wish all plants to bring forth the same flower, but rejoices in the infinite variety of bloom.

It is Utopian to expect a professor of art to have the wisdom of a horticulturist. The professor's talent is rather to be likened to that of the sausage machine. Many elements go into it but they all come out sausage.

OF CLASS-WORK

Class-work has ever been a stumbling-block to the man of genius. He will always be misunderstood by the vast majority of the students who cannot understand his original work. They praise what is mediocre, for that they comprehend, and damn all the rest. It is hard late in life to resist the taste of Tom, Dick and Harry. It is far harder for the young Raphael to hold his own against the mob, especially as the mob is backed by the teaching of those in authority.

Budding genius has a hard road to travel. His first need is an older sympathetic friend who will give him faith in his most original work, not the easiest thing for budding genius to find. Then he must keep in close touch with the old masters and with humanity quite aside from art. These are the two great sources of strength.

THE IDEAL TRAINING

To formulate an ideal is a harmless amusement. There are times when it is useful, for there is in almost every ideal much which can be realized. Should a fairy godmother come to me and ask what boons I should wish for an unborn Apelles my answer would be: "Let him be born in Paris of art-loving parents; give him no end of moral, mental and physical vitality; bring him up with the best of the modern artists as friends; let him feel on very intimate terms with Dante, Shakespeare and Molière, having learned Italian, English and French in childhood; when old enough, have him travel, especially in Italy, Greece and the Orient; let him know music and love it, Bach and Mozart, Gilbert and Sullivan too, and La Belle Hélène; then, of course, he must be familiar with the Louvre, the National Gallery, Durand-Ruel's and Vollard's; he must have money too, enough for model hire; and lastly he should be kept in absolute ignorance of the existence of art-schools."

FAUTE DE MIEUX

As most of us can never hope to have all these advantages we must, faute de mieux, have outside help. Our first need is to have a friend to help us find ourselves, someone to bring to us the great art works of all time. Thus each of us may come to know in what directions his sympathies lie, for we ought to feel from the start a close bond of

sympathy binding together all those who have worked as we would work. Now for us who have no Louvre, access to a good collection of photographic reproductions is of great importance.

After the student is sufficiently grounded in the history of art to have gotten his bearings comes a really Herculean task for the friend or teacher. It is to convince the youth that the race is not always to the swift. Indeed in art the ultimate victory is seldom to the swift and the despised tortoise gains laurels in his old age long after the hare is forgotten. It is only natural that the student should wish to paint in a bold way as soon as possible, yet only those who have held themselves in check have achieved lasting success.

The methods of study of our great Western painters have always been the same. First they patiently drew and painted Nature with all her manifold variety and detail. Little by little with practice they learned what could be eliminated. They began with a simple palette and doubtless got muddy color at first. It did not bother them. Gradually they mastered the more elemental colors and then one by one they would use more subtle shades. So they knew the use of each color. The lives of all these painters are monotonously alike. Their early work is a dull routine—just the patient plodding to which every genius must submit if he would be the master and not the slave of his materials. It is only in middle life that they gain entire freedom of expression and let themselves out. In their green old age work is no longer drudgery but just play.

This experience, the valued tradition of Europe, is being thrown to the winds in America. First in

our schools they trample out whatever individuality the unfortunate student may have. And then—instead of patiently working out his own salvation—he is taught to make bold rapid sketches from nature in strong color à la Sorolla.

Such a method of training gives a fictitious appearance of strength. There is a rapid advance in facility, and, in consequence, the pupil overestimates his ability. Meanwhile the sense of form, of construction, is lying dormant, the sense of form upon which the whole structure of art must rest. The student naturally becomes more and more superficial, having come to despise the sincere, honest efforts of men of earnest purpose.

When you build, build yourselves stately palaces of art, but see to it that the foundations rest upon the solid rock.

OF COMPOSITION

The classicists feel that a painting should express, among other things, man's sense of order. They think that, although it may represent a scene from nature, yet the forms and colors should be such as would make it harmonize with its final surroundings. This effect is obtained through composition. Our older American landscape school is entirely founded upon the Barbizon School and has borrowed the compositions of Rousseau and Corot. Such composition is not suited to our environment nor are any of the known conventional forms of arrangement. What then is the art student to do? Exactly what the young writer should do. Make himself familiar with the classics. Then if he has anything to him there is little danger but that his

own style will have nobility and yet will be his own. Familiarity with Shakespeare, Milton, Dryden, and Swift will keep a man from going far astray. With such training our masters of prose learned to write—Lincoln, Thoreau, Emerson, Whitman. A similar training is the only one which will give us style in painting. Become familiar then with the masters of composition—the early painters of the Italian Renaissance, Raphael, Michael Angelo, the Carraci, Poussin, Claude Lorrain, Watteau, Puvis de Chavannes, Degas.

There are a lot of negative rules which I could give you, but I shall confine myself to two.

Do not bore.

Do not be obvious.

On these two rules hang all the other rules and the critics.

OF FORMULAE

A formula is a recipe used as a substitute for observation, intellect, or feeling. Formulae are murderers of individuality, yet, at the academy, they are considered as a potent means of grace.

OF SPONTANEITY

Spontaneity is a precious quality in good painting, but it should be no excuse for second-rate art. The drunken man who kissed the Jersey heifer was spontaneous.

OF STYLE IN PAINTING

"Le Style, c'est l'homme" Voltaire has said. A man's style is indeed the very essence of a man's inmost self, as intimate as the man's own wife. Yet most teachers would pass their style on to their pupils. They have artistic progeny so clever that one cannot tell the child's work from that of his father.

OF GREATNESS

No man has to be a great painter to have a place in the world. We cannot all of us have Raphaels or Rembrandts in our living rooms, but we can have good honest work by lesser man. Do not be ashamed to be a lesser man.

Not one of you by taking counsel can make himself a great painter. Any one of you can become a good painter. Strive, therefore, not to be great, but to be good painters, thoroughly understanding the details of your craft. Should it have pleased the gods to have conferred greatness upon you at your birth, it will gradually manifest itself and then, indeed, you may kick up your heels and dance.

OF IMPERSONALITY

While we are talking of greatness, it would perhaps be well to speak of a quality which I think you will find to be in all the greatest works of art, music and literature, Impersonality. After all that I have said to you this summer about the value of personality and individual expression you may think I am contradicting myself. By no means, for impersonality is in no way the antithesis of personality, but its fulfilment. As a great man gets bigger and broader he drops a lot of his prejudices and meannesses, and his heart, like that of St. Francis, goes out in sympathy to all manner of men, to the birds of the air, and even to inanimate nature, until he gets to feel in harmony with the universe. Gradually he has passed beyond the personal into the impersonal. Whatever the hand of such a man finds to do will bear the stamp of his breadth of vision. It will remain personal because it will be true to his inmost self. It will, however, also be impersonal, because the man has so broadened in character that in his work he no longer expresses the emotions of one man, but those of mankind.

You will find this quality in the work of the Egyptians, in the Assyrian sculptures, in Chinese art and literature of the classical period, and in the finest Greek art. Impersonality underlies Greek literature—Homer, Aeschylus, Sophocles, Herodotus, Plato, Plutarch. In the Greek tragedy there is a constant undercurrent of feeling. It

does not merely bubble up at tragic moments, but it is ever there. The Greek dramatist sees his hero die without apparent emotion. He knew from the beginning that his hero must die. Dickens, on the other hand, blubbers like a baby over the death of little Paul Dombey. It would seem that there is some kink in the Anglo-Saxon intellect which has always prevented it from attaining an impersonal vision except through great effort.

It is naturally difficult to tell you exactly what I mean when I speak of so abstract a quality as Impersonality, and I fear you already have the impression that it is always something cold and distant. For it is true that much of our most uninteresting art is impersonal through its absolute lack of character. The painter had not sufficient vital force to put life into any portion of his work. It is all evenly dull. But there is other work, equally impersonal, in which the painter has put life into everything, in which he has let his love go out to every element of his painting. It is not owing to any lack of character that such work is impersonal, but because of the breadth and intensity of the artist's sympathy.

To make my meaning clearer let us take a concrete example. At the Memorial Exhibition of the work of Winslow Homer, held in the Metropolitan Museum, was a painting in which hounds are pursuing an almost exhausted deer swimming across a lake. A young man in a boat has approached so close that he is about to give the deer a deathblow. There is no lack on Homer's part of sympathy with the deer yet that does not prevent him from showing his full appreciation of the joy of the dogs and the hunter about to seize their

prey. It is given to few men to have such breadth of vision and the painting is, indeed, a masterpiece of impersonal art.

It was given to the Dutchmen of the sixteenth and seventeenth centuries to express the joy of the hunter, to Landseer to express sympathy with the hunted, to Winslow Homer it was first given to realize the full significance of the whole.

OF VITALITY

When you paint a runner, make him run; a prize-fighter, let him slug; a philosopher, see that he thinks. All these things are far more essential than mere correctness of outline. Rembrandt has painted a woman wading in the water. She is trembling with the fear of slipping into some hidden hole and you feel the groping of the feet hidden beneath the murky water.

The proportions are all out. What of that? No painter but Rembrandt could have given this particular touch of life with such truth.

OF CONSTRUCTION

Construction in painting is the building up of form through knowledge. When we say that a painting is well-constructed we mean that the essential forms are intelligently rendered. In landscape work it means that one has the feeling that the surfaces are solid and real and that one can actually walk about within the picture. A man who does not know how to construct may draw and paint well superficially, but he cannot create a great work of art. Construction and values

should be both learned, but of the two, construction is infinitely more important. This is shown in that, although I can name a dozen masterpieces in which values have been ignored I cannot think of one badly constructed.

The dozen:

Michael Angelo.....Sistine Chapel
Botticelli ..... Spring
Velasquez.....The Surrender of Breda
Titian.....Sacred and Profane Love
Courbet ..... L'Enterrement
Manet .....The Dead Christ
Rubens....The Descent from the Cross
Puvis de Chavannes....Saint Genevieve
Giorgione .....Fête Champêtre
Rembrandt.....The Night Watch
Raphael.....The School at Athens
Leonardo .....Mona Lisa

These men felt that, in order to have their values true, they would have to sacrifice something more essential, so they set values aside. Solid construction is more difficult than correct values. The profound truth is always harder to get at than the superficial.

Construction in painting is like mortar in building. What a brave showing you can make at the start without mortar! Your walls go up quickly, but, festina lente, after you get them to a certain height there is no going further unless you tear all down and start afresh. That requires courage, energy, and the spirit of youth.

Construction is the most important intellectual element in purely abstract art. We all recognize that it is possible to derive exquisite pleasure from the perfect harmony of lines or masses. The prin-

ciples upon which such harmonies are built are principles of construction. They are the cause of the pleasure we get from purely abstract painting like the recent work of Picasso. They are also a source of pleasure in the study of mathematics and, in the music of the great Classical masters, they are even more important. When abstract painting or music is solidly constructed we speak of it as being architectural.

OF CLEVERNESS

Cleverness seems to have always been the preoccupation of men without temperament and of those who have nothing to say. The English and American painters as a rule have not enough temperament to enthuse over their subject and so they enthuse about technique. Lavery, Orpen and John, Sargent and Alexander, all show this tendency. In the years I spent in Paris I never heard the Frenchmen discussing technique. Simon, Ménard, Gaston La Touche, Fantin-Latour, indeed, all my French friends were intent on expression and never bothered about brushwork.

Fantin was amazed when I told him that I considered him to be the greatest living technician and that he ought to take at least one pupil so that his technique should not die with him. He answered, "What I know about technique is just what is suited to my needs. There is nothing wonderful about it, but it satisfies my requirements. Go look at the model, my boy, get so saturated with your subject that you are carried off your feet by it, and then paint. Don't bother about cleverness and in time you will have a technique. Do not

seek it or you will never find it. Work sincerely, frankly, and some day, when you least expect it, technique will be given to you."

THE INTERNATIONAL SHOW

The French section at the International Show gave us for the first time in years a glimpse of modern art which was neither second-hand nor shopworn. Maurice Denis, Ségonzac, Matisse, Odilon Redon, Gauguin, Seurat, Cézanne, the Villon brothers, much that one likes, much, too, that one does not, but all of it first hand.

Now, if ever your own work gets to be second-hand, if it no longer expresses your own self but looks like some other man's work, take it out back of Sam Dexter's and make a nice little bonfire.

If your work gets shopworn, the same ideas cropping up over and over again, quit painting for awhile and hire yourself out either as a nursery maid or a bartender.

OF LARCENY

If you steal a man's watch and get caught you go to jail.

If you steal a man's drama or novel, I do not know exactly what they do to you, but there are damages and it's the devil to pay.

If you steal a man's art and paint in his style, the man, alas, has no redress, but Nemesis overtakes you just as surely. You may have stolen from Zorn all but his name. Your Zorns might

even be a little better than their prototypes. But it will avail you nothing for, somehow, people do not buy Zorns signed Smith, nor yet Sargents signed Jones.

THE BOON OF DIOGENES

It is essential that you see with your own eyes, not with mine. Of this freedom from outside influence be jealous. I do not mean that you should live in a pit and never try to gain the eagle's broad vision. We can learn from one another without surrendering our own individuality. Only do not let me or any other man "personally conduct" you. When you go out to sketch it is better to go alone. You should be alone so that Nature may fully react on you. I come of a faith which admits of no go-between between me and my Maker. The Quaker has always felt the intimate relationship between the Father in Heaven and the child of men on earth. The feeling is that no priest or bishop should ever come between Father and child. It seems to me that the artist should hold that no man should ever come between him and that subtle something we call his inspiration.

Diogenes had but one boon to ask of Alexander: "Stand aside so as not to deprive me of my precious sunlight."

PRECEPTS FROM LEONARDO

It is always with hesitation that I recommend the study of Leonardo's Treatise on Painting, for a too close attention to his precepts is liable to breed a pedantry far removed from creative work. Yet there is so much that is vital in the work that I shall transcribe many of the most essential paragraphs.

"Let the student remember to acquire accuracy before he attempts quickness."

"Many are very desirous of learning to draw who are void of a proper disposition for it. This may be known by their want of perseverance, like boys who draw everything in a hurry."

"When you draw from a nude model, sketch in always the whole of the figure, suiting well all the members to each other, even though you finish only that portion which appears the best. So, when you use such studies, all parts will hang together."

"A painter ought not to refuse to listen to the opinion of any one."

"I have derived no small benefit, when in the dark and in bed, from retracing in my mind the outlines of those forms I had just been studying, particularly such as had seemed the most difficult to comprehend and retain. By this method they will be confirmed and treasured up in the memory."

"It reflects no great honor on a painter that he can execute but one thing well, confining himself

to some particular object of study. For there is scarcely a person so void of genius as to fail of success if he but give himself up to one line of work."

"Those who have become enamoured with the practise of the art, without having previously applied themselves to the diligent study of the science of the art, may be likened to the pilot who put to sea without rudder or compass."

"Observe decorum in everything you represent."

"By looking carefully at old dirty walls or at stones and veined marble of many colors, you may fancy that you can see landscapes, battles, figures in activity, grotesque faces and dresses with an infinite number of other objects. Thus the imagination is stimulated to new efforts by a few confused lines."

"Should you wish your drawings to be both good and useful, be very deliberate, observing well which of the lights are of the first rank in point of brightness; and the same with the shadows, comparing their darkness one with another, and how they blend together; compare the quality and quantity of each with the other and observe the general direction. Be careful also of your outlines, the divisions of the members. Remark what quantities of parts are on one side and what on the other; and where they are more apparent, where less, where broad and where slender. Lastly, take care that the shadows and lights be fused in one another, without hard edges or lines. Just as smoke loses itself in aether so much your lights and shadows pass from one to the other without

apparent separation.) When you have acquired the habit of accuracy and have trained your hand, quickness of execution will come of itself."

"To give a great effect to figures, you must oppose to a light one a dark ground, and to a dark figure a light ground, contrasting white with black and black with white. As a rule contraries give force and brilliancy of effect by their opposition."

"Anything white will seem whiter when opposed to a dark ground, and, on the contrary, darker on a light ground. This we see in watching snow as it falls. While it descends it seems darker against the sky than when we see it against an open window which, owing to the darkness of the inside of the house, makes it appear very white."

"For those colors which you mean should appear beautiful, prepare a ground of pure white."

"We are to consider in what part any color will show itself in its most perfect purity; whether in the strongest light or deepest shadow, in the half tone or in the reflected lights. We must first determine what color we shall consider because colors differ greatly in this respect. Black is most beautiful in the shades, white in the brightest light, blue and green in the half tone, yellow and red in the light, gold in reflected lights, and lake in the half tone."

"As the quality of colors is disclosed to the eye by the light it is natural to conclude that where there is most light there will also be seen the color in its true quality; and where there is most shadow, the color will participate of, and be tinged with the color of that shadow."

"No object appears in its true color unless the light which strikes upon it be of the same color. This may be seen in draperies where the light folds casting a reflection throws a light on other folds opposite them and makes them appear in their natural color. The same effect is produced by gold leaves casting their light on one another. The effect is quite the contrary if the light be received from an object of a different color."

"White is not a color, but has the power of receiving all other colors."

"Of colored bodies the purest white will be seen the greatest distance. Therefore the darker the color, the less it will bear distance.

"Of different bodies of equal whiteness and the same distance from the eye, that which is surrounded by the greatest darkness will appear the whitest; and, on the contrary, that shadow will appear darkest which has the brightest white around it."

"Of different colors equally perfect that will appear purest which is seen near its direct contrary: a pale color against a dark red; a black upon a white (although neither one nor the other are colors) blue near yellow;* green near red. Thus it is because each color is more distinctly seen when opposed to its contrary than to any similar color."

"The true color of any object will be seen in those parts which are not occupied by any kind of shade and which have no gloss."

* The yellow of the Renaissance is not a true yellow but an orange.

"Observe that where shadows end there will always be a kind of half shadow to blend them with the lights. The shadow from any object will mix more with the light at its termination in proportion as it is further from that object."

"The shadows of bodies produced by the redness of the setting sun will always be bluish. A white wall, being deprived of local color, is tinged by the color of those bodies from which it receives the light —which, in this case, are the sun and sky. But, because the sun is red towards evening and the upper sky is blue, the shadow on the wall, not being enlightened by the sun, receives only the reflection of the sky, and therefore will appear blue; and the rest of the wall, receiving light immediately from the sun, will partake of its redness."

"The boundaries which separate one body from another are of the nature of hypothetical lines rather than of real lines. The end of any color is only the beginning of another and the boundary should not be called a line for nothing interposes between them."

"Black draperies will make flesh-tones appear lighter than reality, and white draperies will make them seem darker. Yellow brings out their color, while red makes them pale."

"Let the painter in his reflected lights on the human body, particularly in the flesh-tones, mix some of the color of the draperies which comes nearest the body; taking care not to pronounce it too distinctly without good reason."

"The local color of such objects as are darker than the air will appear less dark as they are more remote. On the contrary objects lighter than the air lose their brightness in proportion to their distance from the eye."

"Whatever may be the color of distant objects the darkest will appear most tinged with blue."

"Of all colors other than blue those nearest to black* will, when distant, partake most of the azure. On the contrary those most unlike black will preserve their natural color the greatest distance. The green, therefore, of the fields will change sooner into blue than yellow or white, which will preserve their true color at a greater distance even than red."

"The darker the mountain is in itself the bluer it will appear at a great distance."

"A painter cannot be said to aim at universality in his art unless he love equally all sides of that art."

"One painter ought never to imitate another, because he then can no longer be called the child of Nature but the grandchild."

"Remember that, when, by the use of your own judgment, or the observation of others, you have discovered errors in your work, you should at once set about correcting them—lest, in exposing your works to the public, you expose your defects also. Admit no excuse by persuading yourself that you will retrieve your character and in some succeeding work you will make amends for your shameful

* Leonardo considers black as a more intense blue.

negligence, for your work does not perish as soon as it leaves your hands, like the sound of music, but remains a monument of your ignorance."

"The painter who has no doubt of his own ability will attain little."

"There is nothing more apt to deceive than our own judgment in the criticism of our own works. We should derive more advantage from having our faults pointed out by our enemies than by listening to the opinions of our friends. They are too much like ourselves and their judgment may be too much like our own."

"When the work is equal to the intelligence of the painter it is a bad sign. When it surpasses his intelligence it is still worse, as is the case with those who wonder at having succeeded so well. But when the intelligence is greater than the work it is a perfectly good sign, and the young painter who possesses that rare disposition will, without doubt, arrive at great perfection."

"Whoever flatters himself that he can retain in his memory all the effects of Nature deceives himself for no memory is so capacious. Therefore consult Nature in everything."

"The principal and most important consideration required in drawing figures is to set the head well upon the shoulders, the chest upon the hips, the hips and shoulders upon the legs."

The foregoing precepts will be helpful to almost every student of painting. They do not, however, show a certain narrowness of conception which is

illustrated in other portions of his treatise. Leonardo's outlook on art is thoroughly Florentine and is therefore tinged with a certain provincialism. It would have been impossible for Leonardo to admit that there could be an art ignoring chiaroscuro and perspective yet of tremendous import. In speaking of light and shade he says: "The first object of a painter is to make a simple flat surface appear like a relievo, and some of its parts detached from the ground. He who excels all others in this part of his art deserves the highest praise. This perfection of the art comes from the correct distribution of lights and shades known as Chiaroscuro. If the painter then avoids shadows he may be said to avoid the glory of art, and to render his work despicable to real connoisseurs for the sake of acquiring the esteem of vulgar and ignorant admirers of fine colors, who have no knowledge of relievo." Of perspective Leonardo says: "Practice must always be founded on sound theory; to this Perspective is the guide and and entrance, without which nothing can be done." To-day with our broader outlook on art it is easy to point out the exaggeration of such statements. For we appreciate that much of the art which we prize the most could not be measured by such standards. Chiaroscuro and perspective are but slight elements in the glory of the art of India, China, and Japan, nor do they play an important part in Egyptian, Greek, Roman and Medieval painting. They were prized by Leonardo because his knowledge of them was in great measure the fruit of his own labors. Whatever we discover ourselves, that we prize above all other possessions. He also valued these principles

because they were the product of our concrete Western civilization. Knowing nothing of the abstract art of the Orient, he could conceive of no great painting devoid of these essentially Western attributes, chiaroscuro and perspective.

With these limitations—which were the necessary result of Leonardo's environment—his treatise on painting is the most vital we have. Those who accept it from cover to cover as absolute truth become pedantic. For truth is like the ocean in its immensity. The wisest of us are but as the children whose knowledge of the sea is derived from sailing paper boats in the mud puddles along the road.

SOROLLA IN AMERICA

About thirty years ago the instantaneous Kodak came into general use. There was hardly a greengrocer or a pastry cook who did not rejoice in his ability to make pictures. Somehow the paintings at the Metropolitan Museum of Art did not measure up to Kodak standard.

When Sorolla came to New York the greengrocer and the pastry cook got wind of the exhibition at the Hispanic Society. There they rubbed elbows with the daughters of millionaires and were supremely happy, for here, at last, was a man whose outlook on life was evidently their own. Moreover, he did know how to paint. The sunlight fairly glowed. It was the apotheosis of the colored snap-shot.

Landseer was the idol of the mob fifty years ago. Sorolla is the idol of the mob to-day.

And then one thinks of all the men who are not idols with any mob—the noble army of painters who have made our modern art so significant. Despised alike by greengrocer they humbly worked on—Corot, Rousseau, Millet, Menzel, Puvis de Chavannes, Monet, Manet, Degas, Guillaumin, and Cézanne. Most of them had little encouragement, yet they rejoiced in their old age, for each had intimations of the immortality of his art. For they had all worked faithfully, each true to his own vision, and, strange to say, not one of them saw with the eyes of the greengrocer or the pastry cook.

PROBLEM

A few years back I attended an exhibition of the recent work of a well-known American painter. There were twenty-nine landscapes all of which had a heavy clump of trees on one side and a small group of spindling birches on the other. Of the twenty-nine landscapes twenty-eight had the same long low house nestled under the heavy clump of trees. Furthermore, twenty-five had a shepherd or shepherdess with the drove of sheep. Of all these shepherds and shepherdesses not one had the upper garment the same color as the lower.

In the gallery I met a noted art-patron. "What a rare treat this must be for you, Mr. Field; what feeling! What poetry!" I have regretted ever since not having told the patron of art exactly what I did think of it all.

Dealers have said to me: "We could handle your work, Mr. Field, if you would only stick to one subject and one way of painting." Satan in our days has indeed an oily tongue, yet not for a mess of pork and beans should the artist barter his soul.

Whom must we blame for this state of things? The artist, the dealer or the patron? Is it not all three? Yes, and also you and me. Our weak-kneed habits of life are to blame. Why didn't I tell the patron of art exactly what I thought of his taste? Why have not his friends done so? Why are all patrons of art so shielded from criticism that whenever a shaft does reach them the pain is so unexpected that they wince and then rage? We all have a dozen innocent desires we dare not avow because, forsooth, society frowns upon them. We all do a dozen little things which we know are wrong, but we go on doing them for, if we did not, society might frown on us. Great art is not the product of weak knees. It manifests itself whenever a broad, whole-souled art-loving man, fired with enthusiasm, masters the material difficulties of his craft.

TO THE CLASS

(ON THE OPENING OF THEIR SHOW)

When the class began two months ago I did not know whether an art school devoted to the development of individual expression could succeed. I feared that some of you would strive too consciously to do something new and the result would be bizarre, sensational but insincere. I feared that others would not have sufficient personality to say anything worth the saying. Both fears were groundless.

I have seen the work of almost every one of you gain day by day in solidity and character. Some of you have even gone far in developing an individual style.

Best of all, not one of you has come to paint in any way like myself.

In the words of the Tammany chieftain to his braves the night after a most successful election: "Friends, you done noble."

Ogunquit, Me., H. E. F.

August 24th, 1913.

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